flowing into a plasma reaction chamber a gas mixture comprising a first amount of hexafluorobutadiene and a second amount of a chemically inactive diluent gas and including substantially no carbon monoxide, wherein a ratio of said second amount to said first amount is at least one;

applying a first level of RF power to a pedestal electrode supporting a substrate containing said oxide and nitride layers; and

exciting said gas mixture into a plasma to thereby selectively etch said oxide layer to said nitride layer.

2. (Already Amended) The process of Claim 1, wherein said oxide layer overlies said nitride layer and said ratio is at least ten, to thereby etch said oxide layer selectively to said nitride layer.

12. The process of Claim 1, wherein said exciting step includes applying an oscillatory electrical signal to excite said gas mixture into a plasma in a region remote from said pedestal electrode.

13. The process of Claim 12, wherein said oscillatory electrical signal is coupled to an inductive coil adjacent to said chamber.

14. (Already Amended) The process of Claim 12, wherein said applying steps applies at least 1600W to said pedestal electrode normalized to a 200mm wafer.

16. The process of Claim 1, wherein processing conditions are chosen to produce a processing window of 25% in the amount of the fluorine-containing gas.

21. (Amended) A process for etching an oxide layer preformed with holes extending downwardly from a top surface thereof, comprising the steps of:

flowing into a plasma reaction chamber a gas mixture comprising a first amount of a fluorine-containing gas and a second amount of a chemically inactive diluent gas, wherein a ratio of said second amount to said first amount is at least one;

applying a first level of RF power to a pedestal electrode supporting a substrate containing said oxide and non-oxide layer; and

exciting said gas mixture into a plasma to etch said oxide layer, wherein corners of said oxide layer at tops of said holes are exposed during the process.

22. The process of Claim 21 carried out in the presence of a nitride layer, wherein said plasma etches said oxide layer selectively to said nitride layer.

23. The process of Claim 22, wherein said oxide layer overlies said nitride layer.

24. The process of Claim 21, wherein said fluorine-containing gas comprises a fluorocarbon.

25. The process of Claim 24, wherein said fluorocarbon consists of at least four carbon atoms, at least an equal number of fluorine atoms, and no more than two hydrogen atoms.

26. The process of Claim 24, wherein said fluorocarbon is hydrogen free.

27. The process of Claim 25, wherein said fluorocarbon is selected from the group consisting of hexafluorobutadiene, hexafluorocyclobutene, hexafluorobenzene, octafluorocyclobutane, and octofluoropentadiene.

28. The process of Claim 27, wherein said fluorocarbon comprises hexafluorobutadiene.

29. The process of Claim 28, wherein said oxide layer overlies a nitride layer and said plasma etches said oxide layer selectively to said nitride layer.

30. (New) The process of Claim 1, wherein said chemically inactive diluent gas is xenon.

31. (New) The process of Claim 1, wherein said chemically inactive diluent gas is argon.

32. (New) The process of Claim 21, wherein said chemically inactive diluent gas is xenon.

33. (New) The process of Claim 21, wherein said chemically inactive diluent gas is argon.